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(12) United States Patent

Enzenroth et al.

(54) EXHAUST FAN ASSEMBLY

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Related U.S. Application Data

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(58) Field of Classification Search

CPC F24F 7/00 See application file for complete search history.

(56) References Cited

U.S. PATENT DOCUMENTS

37,270 A 1/1863 Betts 144,586 A 11/1873 Wingate (Continued)

FOREIGN PATENT DOCUMENTS

CN 2118836 10/1992 CN 2337453 9/1999 (Continued)

OTHER PUBLICATIONS

Attached Appendix A (Figure 2 in US 2003/0114098 A1 with examiner's annotations).

Attached Appendix B (Figure 5 in US 2003/0114098 A1 with examiner's annotations).

Canadian Application 2493434, Notice of Allowance mailed Oct. 2, 2013, 1 page.

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(57) ABSTRACT

An exhaust fan assembly is provided for expelling contaminated air from a building. The assembly includes a plenum, a fan assembly attached to the plenum, and a windband mounted on top of the fan assembly. The fan assembly is constructed of cylindrical outer and inner walls which define a bearing chamber and surrounding annular space. A fan driven by a shaft extending downward from the bearing chamber draws exhaust air from the plenum and blows it up through the annular space to a nozzle at the top of the fan assembly.

20 Claims, 13 Drawing Sheets

